Amendments to the Claims

This listing of claims will replace all prior version, and listings, of claims in the application.

Listing of Claims:

1. Cancelled

2. Cancelled.

3. Cancelled.

4. Cancelled.

5. (Currently Amended) A phase detector, comprising:

a sampling clock generator which generates a clock at an oversampling rate compared to a data rate of an input sequence;

a first ~~samplers~~ sampler which samples data values of the input sequence;

a second sampler which samples edges between the data values; and

a data phase detector which determines phase error between data transitions in the input sequence and the sampling clock phases, based on amplitudes of the sampled edges, the determined phase error being fed into the sampling clock generator to adjust the phase of the sampling clock.

6. (Original) The phase detector of Claim 5, wherein the phase error is proportional to an amplitude of a sampled edge.

7. (Original) The phase detector of Claim 5, wherein the phase detector comprises:

switches for adjusting polarities of sampled edges based on previous and next data values,

the polarity-adjusted sampled edges being added together to form a phase error indication, the phase error indication driving the sampling clock generator.

8. (Original) The phase detector of Claim 7, wherein any of said switches ignores a sampled edge if no transition occurs between the previous and next data values.

9. (Original) The phase detector of Claim 7, wherein the data phase detector comprises plural voltage-to-current converters which convert sampled edge voltages to currents, such that the swatches switch current polarities, and wherein the sampled edge currents are added together via hard-wiring.

10. Cancelled.